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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/529,455

**Applicant(s)**

DENG ET AL.

**Examiner**

Tuan V. Thai

**Art Unit**

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 14-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 and 14-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 28 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**Part III DETAILED ACTION**

***Specification***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 21, 2008 has been entered.

2. Claims 1-12 and 14-19 are presented for examination. Claim 13 has been canceled.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have

the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 is rejected under 35 U.S.C. § 102(e) as being anticipated by Tullis (USPN: 6,535,243).

Regarding Claim 1, the claim recites "A data exchange and storage device, comprising: a controller module including a firmware used for controlling the operation of each of modules in the data exchange and storage device and performing data processing and information exchange;". Tullis teaches a hand-held digital camera (i.e. data exchange and storage device) that is able to wirelessly transfer data with a host computer. Fig. 2 shows the camera to have a processor (i.e. controller module) that is used for controlling the memory and transceiver (i.e. for controlling the operation of each of modules in the data exchange and storage device) and perform data processing (Col. 4, Line 25) and information exchange (Col. 4, Lines 22-25). Since the processor, which is hardware, is able to perform processing on raw digital image data (Col. 4, Line 25), it is then applying predetermined steps to an image, and qualifies as firmware. Claim 1 further recites "an internal memory module for storing data under the control of the controller module". Tullis teaches the digital camera to have built-in memory (Col.

4, Line 42), which qualifies as an internal memory module for storing data under control of the processor (i.e. controller module). Claim 1 further recites "a system interface module capable of being connected with a data processing system and performing data exchange with the data processing system under the control of the controller module; and". Fig. 2 teaches a transceiver (i.e. system interface) with a transmitter and receiver, the transceiver being wirelessly connected (Col. 5, Line 23) to a host computer (i.e. data processing system) (Col. 5, Line 43). The transceiver transfers data to and from the host computer (i.e. performs data exchange with the data processing system) (Col. 5, Line 60). Claim 1 further recites "an external storage equipment interface module being connected with an external storage equipment and performing data exchange with the external storage equipment under the control of the controller module." Tullis further teaches that removable memory (i.e. external storage equipment) can augment built-in memory (Col. 4, Line 43). Col. 1, Line 40 teaches that removable memory can include detachable memory cards, as taught by Sawanobori (US 6535243), whom Tullis incorporates by reference. Fig. 1 of Sawanobori teaches an interface (Interface CCT) that connects the memory card (i.e. external storage equipment) to the digital camera. The interface allows data to be exchanged from the

camera to the memory card (Col. 3, Line 40 of Sawanobori). Then Tullis teaches, through an incorporated reference, an interface that qualifies as an external storage equipment interface module. Since the processor of Fig. 1 is able to write to the host computer (i.e. data processing system) and removable memory (i.e. external storage equipment), both are under at least partial control of the processor (i.e. controller module). The further limitation of "wherein the controller module permits data exchange and data access from the internal memory module to the external storage equipment and from the external storage equipment to the internal memory module when the data processing system is not connected" is taught by Tullis since Tullis clearly disclose that the digital camera can communicate with the host computer through the wireless communication link (e.g. see abstract, column 2, lines 45 et seq.). Tullis further discloses an audio module and/or a video module for combining with the internal memory module or external storage equipments to implement a function of playing multi-media; for example, Tullis teaches the digital camera to allow for a voice recording to annotate images (Col. 8, Line 10) where a microphone and speaker makes up an audio module for recording and outputting the voice data (i.e. implement a function of playing multi-media). Further note that the function of playing multi-media

constitutes intended use.

***Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4-8, 10-12, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia (USPN 6,658,202 in view of Tullis (USPN: 6,535,243).

Regarding Claim 1, the claim recites "A data exchange and storage device, comprising." a controller module including a firmware used for controlling the operation of each of modules in the data exchange and storage device and performing data processing and information exchange;" Battaglia teaches a portable data transfer and mass storage device (Fig. 1) (i.e. data exchange and storage device) for transferring data from a

flash memory (i.e. external storage equipment) to a mass storage device (i.e. internal memory module). The apparatus of Fig. 1 transfers data from the flash card of a digital camera to a mass storage device in the apparatus, freeing the memory on the flash card. The data on the mass storage device can then be downloaded to a computer. Fig. 2 teaches a system controller logic and a processor that together qualify as a controller module. The processor has associated firmware (Col. 6, Line 1), and performs data processing (Col. 5, Line 15). The system controller logic controls the operations of the interfaces and internal memory (i.e. modules) (Fig. 2) and performs information exchange (Col. 3, Line 45 and Col. 2, Line 25). Claim 1 further recites "an internal memory module for storing data under the control of the controller module;" Battaglia teaches a mass storage device (i.e. internal memory module) (Fig. 1) for storing data under the control of the system controller logic (i.e. controller module) (Fig. 2). Claim 1 further recites "a system interface module capable of being connected with a data processing system and performing data exchange with the data processing system under the control of the controller module; and". Fig. 1 teaches serial/parallel ports (i.e. hardware system interface module), which Fig. 2 shows to include a USB interface, FireWire Interface, or Parallel Port Interface (i.e. software system



interface module). The interfaces are connected to a computer (i.e. data processing system) (Col. 5, Line 34) and performs downloading and uploading of data (i.e. data exchange) (i.e. Col. 7, Line 25) with the computer. Since the computer receives data through the system controller logic, it is under at least partial control of the system controller logic (i.e. controller module). The further limitation of "wherein the controller module permits data exchange and data access from the internal memory module to the external storage equipment and from the external storage equipment to the internal memory module when the data processing system is not connected" is taught by Battaglia since Battaglia disclose that the data can be transferred/download thru a wide range of ports including firewire (including wireless) as being disclosed (e.g. see column 3, lines 46 et seq.). Claim 1 further recites "an external storage equipment interface module being connected with an external storage equipment and performing data exchange with the external storage equipment under the control of the controller module." Fig. 1 teaches a first flash memory input port and a second memory input port (i.e. external storage equipment interface module) for performing data exchange with a memory module removed from a digital camera (i.e. external storage equipment). Since the memory module transfers data

through the system controller logic, it is under at least partial control of the system controller logic (i.e. controller module); Figure 2 of Battaglia further teaches the second memory input port can have a PCMCIA interface (Col. 4, Line 17).

Battaglia discloses the invention as claimed, detailed above with respect to claim 1. Battaglia, however does not particularly teach an audio module and/or a a video module for combining with the internal memory module or external storage equipments to implement a function of playing multi-media. Tullis discloses the missing element that is known to be required in the system of Battagli in order to arrive at Applicant's current invention wherein Tullis teaches the digital camera to allow for a voice recording to annotate images where a microphone and speaker makes up an audio module for recording and outputting the voice data (i.e. implement a function of playing multi-media), the function of playing multi-media constitutes intended use (e.g. see Col. 8, lines 10 et seq.). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the current invention was made to implement the audio module as taught by Tullis for that of Battaglia invention in order to arrive at Applicant's current invention. In doing so, it would allow the system of Battaglia to provide audio interface to users which results to allowing

the system of Battaglia to serve broader range of application, thereby broadening one's potential market and saving investment capital.

Regarding Claim 4, the claim recites "wherein the system interface module includes USB interface, IEEE 1394 interface, Bluetooth interface, IrDA infrared interface, HomeRF interface, IEEE802.11a interface, IEEE802.11b, IEEE802.11g, SCSI, RS232 and printer parallel port, wired wide area local area interface and/or wireless wide area local area interface." Battaglia teaches the serial/parallel port (i.e. system interface) that connects the storage device of Fig. 1 to a computer system includes a USB and FireWire (i.e. IEEE 1394) interface (Col. 3, Line 47).

Regarding Claim 5, the claim recites "wherein the external storage equipment interface module (64) includes SM,, CF, MMC, SD, MS, MD or x-D interface". Battaglia teaches the flash memory of the digital cameras (i.e. external storage equipment) to include SmartMedia, Compact Flash, MMC media, or Sony memory Stick (Col. 4, Line 5 and Col. 2, Line 53). Then the flash memory input port of Fig. 1 qualifies as an external storage equipment interface module including one of the interfaces above.

Regarding Claim 6, the claim recites "wherein the system interface module and the external storage equipment interface module either includes single interface or a group of interfaces of the same type or different type of interfaces ". Battaglia teaches the interface to the computer system (i.e. system interface) to include a USB, FireWire, and Parallel Port Interface (i.e. group of interfaces), that are either the same or different.

Regarding Claim 7, the claim recites "a power source module for supplying power to the data exchange and storage device from the data processing system through an external power source or a self-supplied battery or the system interface module ". Battaglia teaches a power supply in Fig. 2.

Regarding Claim 8, the claim recites "a manual control module for performing the manual control of data capture and transmission, information prompt, and operational mode switching." Fig. 2 teaches keyboards and buttons (i.e. manual control module) to allow a user to manually initiate download of information onto the mass storage device (Col. 2, Line 66). The keys create a user interface to allow a user to select between downloading data or reformatting the flash memory, the two operations being two operational modes. Col. 3, Line 17 further teaches a LCD display that qualifies as an information prompt,

since it allows a user to preview an image before deleting or keeping it. That is, the LCD prompts the user with an image and lets the user decide whether or not to save the image.

Regarding Claim 10, the claim recites "an information prompt module for displaying static information and dynamic information". Battaglia teaches a LED and LCD display (i.e. information prompt module) that allows the user to decide (i.e. prompts the user) whether to save the image (Col. 3, Line 17). The LED and LCD further display information to the user, with dynamic information such as copy completion status, download-in-progress status (Col. 3, Line 32), or data integrity status and standard-conforming status (Col. 6, Lines 25-30).

Regarding Claim 11, the claim recites "wherein the information includes user information, product information, device information, transmission file information, operational state information and the information of external storage equipments which are connected therewith." Battaglia teaches transmission file information and operational state information (Col. 6, Line 18 and Col. 3, Line 26), information of external storage equipments (Col. 6, Line 24) through the LED and LCD display. Information showing the integrity of a flash module (Col. 6, Line 30) qualifies as device and product information. The LCD and LED would further be able to display user

information, as the exact kind of information displayed does not affect the structure of the LCD or LED or information prompt module, and constitutes intended use.

Regarding Claim 12, the claim recites "the information prompt module includes at least one of a liquid crystal display, a light emitting diode, a LED, a sound device and a vibrator. " Battaglia teaches a LED and LCD display (Col. 3, Line 25).

Regarding Claim 15, the claim recites "wherein the external storage equipment is a removable disk or a storage card." Battaglia teaches the external storage equipment to be a flash card that is removable (Col. 2, Line 59).

Regarding Claim 16, the claim recites "1) the controller module of the data exchange and storage device detecting the characteristic information of the external storage equipments connected with the relevant interfaces of the external storage equipment interface module, selecting the relevant interface protocols according to the characteristics information of the external storage equipments, and establishing connections with the external storage equipments;" Battaglia teaches detecting the data integrity of a memory module whose data is to be downloaded to the mass storage device (Col. 6, Line 21). Col. 6, Line 25 further teaches checking whether the memory module conforms to a standard format supported by the device. The

integrity and the format of the data on the module qualify as characteristic information of the external storage equipment connected with the relevant interfaces of the external storage equipment interface module. Since the firmware checks for the appropriate standard format (i.e. interface), it is inherent that the relevant transfer format (i.e. interface protocol) according to the format of the memory module is selected. 2) the controller module controlling the data exchange between the data exchange and storage device and the external storage equipment or the data processing system, and controlling the access to the internal memory module and the external storage equipment according to the requests from the data processing system or users." Battaglia teaches in Fig. 2 for the system controller logic (i.e. controller module) to control data exchange between the portable data transfer and mass storage device (title of Battaglia's invention) and a flash memory module (i.e. external storage equipment), where it controls access to the mass storage device (i.e. internal memory module) and flash memory cards according to requests from users (Col. 4, Line 65) or computer system (Col. 6, Line 13).

Regarding Claim 17, the claim recites "the controller module displaying the data read from the external storage equipment or the internal memory module on the display part of

the information prompt module according to the operational instructions of the data processing system and the users; and/or outputting the user information, the operational state information of the data exchange and storage device, the relevant information of the external storage equipment through the information prompt module". Battaglia teaches displaying the image (i.e. data) read from the flash cards (i.e. external storage equipment) on the LCD display (i.e. display part of the information prompt module) (Col. 3, Line 18) according to the operational instructions of the data processing system and user (Col. 3, Line 20). Battaglia further teaches outputting status of the copying (i.e. operational state information of the data exchange and storage device) (Col. 3, Line 25) and relevant information of the flash memory module (Col. 6, Line 29) through the LCD and LED (i.e. information prompt module).

Regarding Claim 18, the claim recites "playing the multi-media data read from the external storage equipment or the internal memory module through the audio module and/or video module according to the operational instructions of the data processing system and the users." Battaglia teaches the data transfer device of Fig. 1 to reproduce music (i.e. play multi-media data read from the flash memory storage through an audio module) (Col. 2, Line 45).



Regarding Claim 19, the claim recites "the manual control module transmitting the operational instructions, such as, storing user data, prompting information, switching operational modes, etc., to the controller module." Battaglia teaches user interface keys (i.e. manual control module) for allowing a user to initiate copying of data from a flash memory module or to reformat a memory module (i.e. transmitting operational instructions such as switching operational modes) (Col. 3, Line 3).

7. Claims 2-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Battaglia (USPN: 6,658,202) in view of Tullis (USPN: 6,535,243) and further in view of Su (USPN: 6,789,164).

Regarding Claims 2 and 3; the combination of Battaglia and Tullis discloses the invention as claimed, detailed above with respect to claim 1. Claim 2 further recites "wherein the internal memory module includes a hard disk, a removable hard disk, a semiconductor storage, and an optical medium storage driving device." Noting that the claim recites for a hard disk, semiconductor storage, and an optical medium storage to all be present. Claim 3 further recites that "the semiconductor storage is selected from one of Flash Memory, DRAM, EEPROM,

SRAM, FRAM, MRAM and Millipede, and adopts one or more semiconductor chips." Battaglia teaches the mass storage device (i.e. internal memory module) (Col. 3, Line 53) can include a hard drive that is fixed or removable (i.e. a hard disk or a removable hard disk), and can further include a high capacity flash memory module or battery backed SRAM (i.e. semiconductor storage selected from one of Flash Memory and SRAM). However, Battaglia and Tullis do not explicitly teach the mass storage device to further include an optical medium storage. Su teaches an apparatus for directly transferring data from a compact flash memory to an optic disk, without an intervening computer system (Col. 1, Line 29). Then combining Battaglia, Tullis and Su would naturally incorporate the optic disk as part of a mass storage device. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Battaglia and Tullis's mass storage device with Su's optical disk writing. Su provides the reference in Col. 1, Line 16, where such storage is space-efficient, therefore being advantageous.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia (USPN: 6,658,202) in view of Tullis (USPN: 6,535,243) and further in view of Mansfield (US 5014192).

Regarding Claim 9, the combination of Battaglia and Tullis discloses the invention as claimed, detailed above with respect to claim 1. Noting that Battaglia teaches the user interface to contain keys (Col. 3, Line 13). Battaglia and Tullis however do not explicitly teach a dial switch. Mansfield teaches a dial switch (Col. 12, Line 14) for locating a file in a mass storage device (Abstract). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Battaglia and Tullis's user interface with a dial switch. Battaglia provides the reference, where the LCD display is meant to allow users to see images stored on the mass storage device. Then a dial switch can allow a user to see all the images of a mass storage device by incrementing through the images, in the same manner as Su teaches incrementing through the files using a dial switch; therefore being advantageous.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Battaglia (USPN: 6,658,202) in view of Tullis (USPN: 6,535,243) and further in view of Viswanadham (USPN: 6,208,044).

Regarding Claim 14, the combination of Battaglia and Tullis discloses the invention as claimed, detailed above with respect to claim 1; the claim further recites "an eject device arranged

at the interface of the external storage equipment interface module, the eject device may eject the external storage equipment after being pressed." Noting that Battaglia teaches a data transfer device, into which a removable memory module can be inserted and removed. However, Battaglia and Tullis do not explicitly teach an eject device and pressing an eject device. Viswanadham teaches an ejection system for a mass storage system, where the ejected medium is a PCMCIA card (Abstract). Viswanadham further teaches an eject button to be pressed for ejecting the card (Col. 3, Line 59). Fig. 1 shows the button to be at the interface of the input port (i.e. external storage equipment interface module). Combining this with Battaglia and Tullis's invention second input port would provide for an input PCMCIA slot that can eject PCMCIA cards through an eject button. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Battaglia and Tullis's mass storage device with Viswanadham's eject device. Viswanadham provides the motivation in Col. 2, Line 20, where manual ejection through a button would obviate the need for a solenoid or motor involved in automatic ejection of PCMCIA cards, therefore being advantageous.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V. Thai whose telephone number is (571)-272-4187. The examiner can normally be reached on from 6:30 A.M. to 4:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571)-272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**TVT**/November 01, 2008

/Tuan V. Thai/

Primary Examiner, Art Unit 2186

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